UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,475	03/24/2004	Michael Hansen	HK-0795	1760

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/811,475	HANSEN ET AL.
	Examiner	Art Unit	
	Soo Jin Park	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *24 March 2004*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-21* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some *   c) ☐ None of:

      1. ☒ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 12-16, and 21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Delabastita et al (U.S. Patent 5,677,093), hereinafter referenced as

Delabastita, in view of Shu et al (U.S. Patent 5,946,454), hereinafter referenced as Shu.

Regarding **claim 1**, Delabastita discloses a method of generating screened

reproduction of a multiple tone image comprising:

a) quantizing the grey values of scanned binary image data (in this case, with

n=8 bits and the tone ranging from 0 to 255 or 1 to 256) at column 6 lines 51-53, which

reads on claimed "quantizing the binary image data is with n bits";

b) obtaining corrected image data through comparing the value of a targeted

point to a threshold; where if the value is smaller than the threshold (in this case, 127) it

is assigned "0" and otherwise "1" at column 7 lines 24-29, which reads on claimed

"obtaining corrected quantized image data from the filtered image data with a threshold

value operation";

however, Delabastita fails to disclose "filtering the quantized image data with a

low-pass filter having a filter window smaller than a screen cell". However, the examiner

maintains that it was well known in the art to perform "filtering the quantized image data

with a low-pass filter having a filter window smaller than a screen cell", as taught by Shu.

In a similar field of endeavor, Shu discloses a method of image enhancement during half-toning comprising using a low-pass filter wherein the kernel of the filter can be of any size and the result depends upon the size of the kernel at column 1 lines 55-63, which reads on claimed "filtering the quantized image data with a low-pass filter having a filter window smaller than a screen cell".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Delabastita specifically by "filtering the quantized image data with a low-pass filter having a filter window smaller than a screen cell", as taught by Shu, for the purpose of less smoothing effect (as a low-pass filter with a larger kernel will provide greater smoothing as suggested at column 1 lines 62-63).

Regarding **claims 2 and 3**, Delabastita and Shu disclose everything claimed as applied above (see claim 1). In addition, Shu discloses an exemplary asymmetrical low-pass filter at column 4 lines 49-58 and exhibited in figure 5, which reads on claimed "providing the low-pass filter with an asymmetrical distribution of filter coefficients with respect to the filter window", "asymmetrically distributing the filter coefficients of the low-pass filter with respect to the filter window".

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Delabastita and Shu by specifically "providing the low-pass filter with an asymmetrical distribution of filter with respect to the filter window" and "asymmetrically distributing the filter coefficients of the low-pass filter with

respect to the filter window", as taught by Shu, for the purpose of providing more smoothing (as suggested at column 4 lines 47-48).

Regarding **claims 4 and 5**, Delabastita and Shu disclose everything claimed as applied above (see claim 1). In addition, Shu discloses an exemplary asymmetrical low-pass filter, which is a shifted version of a symmetrical filter that contains a component equal to the filter shown at figure 5, at column 4 lines 49-58 and exhibited in figure 5, which reads on claimed "obtaining the asymmetrical distribution of the filter coefficients from a symmetrical filter by shifting a filter function by fractions of an image point" (for both claims 4 and 5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Delabastita and Shu by specifically "obtaining the asymmetrical distribution of the filter coefficients from a symmetrical filter by shifting a filter function by fractions of an image point", as taught by Shu, for the purpose of providing more smoothing (as suggested at column 4 lines 47-48).

Regarding **claims 12 and 13**, Delabastita and Shu disclose everything claimed as applied above (see claim 1). In addition, Delabastita discloses quantizing the binary image data into 0 and 1 (accordingly, n=1 bit) at column 6 lines 52-60, which reads on claimed "obtaining corrected binary image data from the corrected quantized image data by quantization with 1 bit" and "quantizing the corrected quantized image data with 1 bit to obtain corrected binary image data".

Regarding **claim 14**, Delabastita and Shu disclose everything claimed as applied above (see claim 1). In addition, claim 14 discloses using the method described in claim

1 on a screened image, which is not patentably distinct from using the method

described in claim 1 on a binary image, thus claim 14 is interpreted and rejected for the

same reasons as stated above in the rejection of claim 1.

Regarding **claim 15**, Delabastita and Shu disclose everything claimed as applied

above (see claims 3 and 14).

Regarding **claim 16**, Delabastita and Shu disclose everything claimed as applied

above (see claims 4 and 15).

Regarding **claim 21**, Delabastita and Shu disclose everything claimed as applied

above (see claims 13 and 14).

2.   **Claims 6-11 and 17-20** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Delabastita and Shu in view of Shimazaki (U.S. Patent 6,724,498).

Regarding **claims 6 and 7**, Delabastita and Shu disclose everything claimed as

applied above (see claim 1), however, Delabastita and Shu fail to disclose "carrying out

the threshold value operation with a threshold value selected as a function of the local

gray value and of the desired correction magnitude". However, the examiner maintains

that it was well known in the art to have "carrying out the threshold value operation with

a threshold value selected as a function of the local gray value and of the desired

correction magnitude" and "storing threshold values in a threshold value table", as

taught by Shimazaki.

In a similar field of endeavor, Shimazaki discloses a method of correcting

targeted (local) halftone dot image point comprising using a previously preset threshold

to match desired output conditions, wherein the threshold values are stored in a

threshold data memory (50), at column 5 lines 4-6 and column 7 lines 10-13 and

exhibited in figure 1, which reads on claimed "carrying out the threshold value operation

with a threshold value selected as a function of the local gray value and of the desired

correction magnitude" and "storing threshold values in a threshold value table".·

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Delabastita and Shu by specifically "carrying out

the threshold value operation with a threshold value selected as a function of the local

gray value and of the desired correction magnitude" and "storing threshold values in a

threshold value table", as taught by Shimazaki, for the purpose of modifying halftone dot

image data (as suggested at column 7 lines 9-10).

Regarding **claim 8**, Delabastita, Shu, and Shimazaki disclose everything claimed

as applied above (see claims 1, 6, and 7).

Regarding **claim 9**, Delabastita, Shu, and Shimazaki disclose everything claimed

as applied above (see claim 6). In addition, Shimazaki discloses a new set of threshold

data (in this case, corresponds to T2), which is a result of multiplying the old threshold

data (in this case, corresponds to T1) by threshold correction data (in this case, an

approximation factor) which is corrected based upon desired sharpness, tone, and color

(and since the initial threshold data memory T1 is a function of gray value and desired

output T2 is also a function of gray value and desired output), at column 6 line 67 and

column 7 lines 1-3, which reads on claimed "determining a threshold value function

T1=f1(G,dG) empirically based upon model screen dots and obtaining a threshold value

function T2=f2(G,dG) therefrom with approximation functions".

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Delabastita and Shu by specifically "determining

a threshold value function T1=f1(G,dG) empirically based upon model screen dots and

obtaining a threshold value function T2=f2(G,dG) therefrom with approximation

functions", as taught by Shimazaki, for the purpose of modifying halftone dot image data

(as suggested at column 7 lines 9-10).

Regarding **claim 10**, Delabastita, Shu, and Shimazaki disclose everything

claimed as applied above (see claims 7 and 9).

Regarding **claim 11**, Delabastita, Shu, and Shimazaki disclose everything

claimed as applied above (see claims 8 and 9).

Regarding **claim 17**, Delabastita and Shu disclose everything claimed as applied

above (see claims 6 and 14).

Regarding **claim 18**, Delabastita and Shu disclose everything claimed as applied

above (see claims 7 and 17).

Regarding **claim 19**, Delabastita and Shu disclose everything claimed as applied

above (see claims 9 and 17).

Regarding **claim 20**, Delabastita and Shu disclose everything claimed as applied
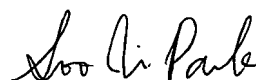
above (see claims 9 and 18).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Soo Jin Park whose telephone number is 571-270-3569. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jefferey Harold can be reached on 571-272-7519. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Soo Jin Park
Examiner
Art Unit 2609

SJP
September 18, 2007

RYAN YANG   9/19/07
PRIMARY EXAMINER